

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1.-49. (Canceled).

50. (Currently Amended) A method of assaying a sample for an enzyme activity that joins a first substrate with a second substrate to form a product or for a factor that affects the activity of said enzyme, wherein the presence, concentration, or activity of said enzyme or said factor is not known, comprising:

- (a) forming a composition comprising said sample, said first substrate and said second substrate, said first substrate being linked to a luminescent label and said second substrate being linked to a capture moiety;
- (b) incubating said composition under conditions wherein said enzyme can form said product at a differing rate in the presence or absence of said enzyme or factor, wherein said product is linked to said luminescent label and said capture moiety and wherein said enzyme or factor is not part of the product;
- (c) capturing said capture moiety on an electrode;
- (d) applying a voltage at said electrode so as to induce said luminescent label in said product to emit luminescence; and
- (e) measuring emitted luminescence so as to measure the presence of said enzyme or factor in said sample;

wherein said enzyme is selected from nucleic acid polymerases, nucleic acid ligases, integrases, ribosomes, and trans-glutaminases.

51. (Currently Amended) The method of claim ~~45, 46, or~~ 50, wherein said enzyme catalyzes formation of a covalent bond between said first substrate and said second substrate.

52. (Currently Amended) The method of claim ~~45, 46, or~~ 50, wherein said first substrate or said second substrate comprises peptides.

53. (Currently Amended) The method of claim ~~45, 46, or~~ 50, wherein said first substrate or said second substrate comprises nucleic acids.

54.-59. (Canceled).

60. (Previously Presented) A method of assaying a sample for an enzyme that cleaves a substrate or for a factor that affects the activity of said enzyme, wherein the presence, concentration, or activity of said enzyme or said factor is not known, comprising:

- (a) forming a composition comprising said sample and said substrate, wherein said substrate is linked to a luminescent label and to a solid phase, wherein said solid phase is not a graphitic nanotube;
- (b) incubating said composition under conditions wherein said enzyme can cleave said substrate so as to cleave said luminescent label from said solid phase;
- (c) immobilizing said solid phase on an electrode;
- (d) applying a voltage at said electrode so as to induce said luminescent label linked to said substrate to emit luminescence; and
- (e) measuring emitted luminescence so as to measure the presence of said enzyme or factor in said sample.

61. (Currently Amended) The method of claim ~~55, 56, or~~ 60, wherein said enzyme cleaves a covalent bond.

62. (Currently Amended) The method of claim ~~55, 56, or~~ 60, wherein said substrate comprises a peptide.

63. (Currently Amended) The method of claim ~~55, 56, or~~ 60, wherein said substrate comprises a nucleic acid.

64. (Currently Amended) The method of claim ~~55, 56, or~~ 60, wherein said enzyme is selected from nucleases, proteases and glycosidases.

65. (Currently Amended) The method of claim ~~55, 56, or~~ 50, wherein said electrode comprises elemental carbon.

66.-68. (Canceled).

69. (Currently Amended) The method of claim ~~45, 46, 50, 55, 56, or 60~~, wherein said composition further comprises an inhibitor of said activity and the measurement of said activity is correlated to the amount or inhibitory ability of said inhibitor.

70.-84. (Canceled).

85. (Currently Amended) The method of claim ~~claims 45, 46, 50, 55, 56, or 60~~, wherein said electrode consists essentially of a metal.

86. (Previously Presented) The method of claim 85, wherein said metal comprises gold or platinum.

87. (Currently Amended) The method of claim ~~claims 45, 46, 50, 55, 56, or 60~~, wherein said factor is selected from an enzyme, an enzyme inhibitor, a denaturing compound, an enzyme activator, an enzyme deactivator, and a co-enzyme.

88.-94. (Canceled).

95. (New) The method of claim 60, wherein said composition further comprises an inhibitor of said activity and the measurement of said activity is correlated to the amount or inhibitory ability of said inhibitor.

96. (New) The method of claim 60, wherein said electrode consists essentially of a metal.

97. (New) The method of claim 96, wherein the metal comprises gold or platinum.

98. (New) The method of claim 60, wherein said factor is selected from an enzyme, an enzyme inhibitor, a denaturing compound, an enzyme activator, an enzyme deactivator, and a co-enzyme.

99. (New) The method of claim 60, wherein said factor is an enzyme.

100. (New) The method of claim 60, wherein said factor is an enzyme inhibitor.

101. (New) The method of claim 60, wherein said factor is a denaturing compound.

102. (New) The method of claim 60, wherein said factor is an enzyme activator.

103. (New) The method of claim 60, wherein said factor is an enzyme deactivator.

104. (New) The method of claim 60, wherein said factor is a co-enzyme.

105. (New) The method of claim 50, wherein said factor is an enzyme.

106. (New) The method of claim 50, wherein said factor is an enzyme inhibitor.

107. (New) The method of claim 50, wherein said factor is a denaturing compound.

108. (New) The method of claim 50, wherein said factor is an enzyme activator.

109. (New) The method of claim 50, wherein said factor is an enzyme deactivator.

110. (New) The method of claim 50, wherein said factor is a co-enzyme.

111. (New) The method of claim 60, wherein said enzyme is selected from nucleic acid polymerases, nucleic acid ligases, integrases and ribosomes.

112. (New) The method of claim 60, wherein said enzyme is a trans-glutaminase.